

**Amendments To The Claims**

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

**Listing of claims:**

1. (Currently amended) A low-temperature and low-pressure nuclear power plant (NPP) spent fuel reactor, wherein the reactor core comprising:
  - a plurality of NPP spent reactor fuel assemblies;
  - upper and lower core grid plates;
  - a plurality of control ~~rod~~ rods and corresponding drive mechanisms; ~~said control rods extending through said upper and lower core grid plates;~~
  - the ~~NPP spent reactor~~ fuel assemblies being located between said upper and lower core grid plates;
  - each of the control rods being inserted from the top of the reactor core into a lattice formed of the upper and lower core grid plates and fuel assemblies; ~~and between said NPP spent reactor fuel assemblies;~~
  - the upper end of each control rod being connected with its corresponding drive mechanism;
  - the reactor core being located in a core vessel located under a core pool, said core pool being provided with coolant inlet and outlet nozzles, which are connected through pipes with a heat exchanger and which forms a cooling circuit for the reactor;
  - wherein NPP spent ~~reactor~~ fuel is directly used as nuclear fuel and wherein light water is used as both coolant and moderator in the cooling circuit in the reactor.

2. (Currently amended) The low-temperature and low-pressure NPP spent fuel reactor according to claim 1, wherein on the top of the core pool there is provided at least one of: a sealing cover and an airtight gas shield.
3. (Currently amended) The low-temperature and low-pressure NPP spent fuel reactor according to claim 1, wherein a pressurizer or a large pool is connected with the coolant inlet nozzle to improve static pressure and maintain pressure at the core outlet.
4. (Currently amended) The low-temperature and low-pressure NPP spent fuel reactor according to claim 1, wherein within the core pool there is ~~coupled to~~ an underwater handling canal which is connected with a spent fuel storage pond and which replaces an additional schema of reloading water layer.
5. (Currently amended) The low-temperature and low-pressure NPP spent fuel reactor according to claim 1, ~~wherein further including~~ a residual heat cooler is provided ~~removal system~~ in the spent fuel storage pond and an electromagnetic valve is arranged on the connection tube to form a passive residual heat removal system.